



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TO: ISDS Designers

FROM: Russell J. Chateauneuf, P.E, Chief
Groundwater and Wetlands Protection

DATE: September 17, 2002

RE: **Sizing BSFs and PSNDs**

The Bottomless Sand Filter (BSF) and Sand Filter (SF) guidance documents contain sizing tables for drainfields based on soil texture, consistence and structure. When designs employing these drainfield technologies are prepared, designers must obtain information on soils at the site in order to size the systems. Such information may be obtained by consulting the site evaluation report. However, preparation of these reports is not required in all cases, including alteration applications and some new building sites exempted from the site evaluation requirement under ISDS Rule SD 2.01. A question has been raised as to whether DEM requires that a soil evaluation, conducted by Class VI soil evaluator, be undertaken in order to obtain the requisite information to design either a BSF or a Pressurized Shallow-Narrow Drainfield (PSND) even if a soil evaluation is not required by DEM regulations.

DEM has evaluated this question and has determined that, in the absence of such soil testing data, designers may use percolation testing results and the table given in Rule SD 26.01 to find the soil class corresponding to the sizing charts in the guidance documents. For example, if the design soil horizon has a percolation rate of 20 mpi, the table indicates the soil may be placed in soil category 7. Referring to the sizing table in the BSF document (page 9) for a Category 1 system, the maximum application rate for the BSF should be 2.8 gal/sf/day. This approach is limited to systems with design flows less than 2000 gpd.

Because several soil categories are assigned a 10 mpi percolation rate, DEM has established the following maximum loading rates for soils with percolation rates less than or equal to 10 mpi:

BSF	Category 1	3.0 gal/sf/day
	Category 2	2.0 “ “

PSND	2.3 gal/sf/day
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Higher loading rates in accordance with the sizing tables will be allowed provided the results of a soil evaluation conducted by a soil evaluator, in accordance with SD26.01 and submitted on the appropriate form, is submitted to DEM with the design. Please note that soil testing conducted for these limited purposes are not subject to witnessing by DEM under provisions in Rule SD 26.00.

Finally, please note that for systems 2000 gpd or greater, a soil evaluation conducted by a licensed soil evaluator is required in order to obtain required data to size the drainfield.